

**C. APPLICANT'S COMMENTS**

Claims 21 - 26 are pending in this Application with no further amendments. Reconsideration of Claims 21 - 26 is respectfully requested. The Examiner's rejections will be considered in the order of their occurrence in the Office Action.

The Official Action rejected Claims 21, 22, 24, 25 and 26 under 35 U.S.C. §102(b) as being anticipated by Rackley (U.S. Patent No. 5,022,329). The Official Action further rejected Claim 23 under 35 U.S.C. §103(a) as being unpatentable over Rackley in view of Noack (U.S. Patent No. 2,375,436). The Applicant respectfully disagrees with these rejections for at least the following reasons.

Rackley merely teaches a “*cyclone furnace for hazardous waste incineration and ash vitrification.*” (Rackley, Title.) More particularly, Rackley is designed and used for “*vitrifying inorganic hazardous material including heavy metals from waste containing organic and inorganic substances.*” (Rackley, Abstract.) Rackley merely teaches the usage of a “slag trap (26)” wherein “[t]he inorganic hazardous wastes and ash from the incinerated organic wastes are captured in the molten slag 14 where they are vitrified and continuously flow out of the cyclone furnace 10 through the slag spout opening 24 to the slag trap 26 into the slag tank 28 for safe disposal.” (Rackley, Column 5, Lines 52-57.) The term “slag” is well-known to mean “vitreous mass left as a residue by the smelting of metallic ore”. (Dictionary.com).

It should also be noted that Rackley adds fuel (e.g. natural gas or fuel gases) during the burning process to continue the incineration which the present invention does not do or require since the biomass generates its own combustible gas for secondary burning. (Column 4, Lines 5-13.)

Furthermore, Rackley is not design for burning organic material containing high levels of silica. While the present invention is attempting to remove silica from the interior of the system

because of the combustion of organic material (e.g. wheat straw), Rackley is in fact adding silica as a fluxing agent which is the opposite of the present invention. (Column 4, Lines 43-45.)

Rackley does not teach or suggest the usage of “silica collector” or a “secondary combustion chamber” as claimed in independent Claim 21. More particularly, Rackley does not teach or suggest:

21. (Previously Added) A biomass gasification system, comprising:  
a primary combustion chamber;  
**a secondary combustion chamber** fluidly connected to said primary combustion chamber; and  
**a silica collector positioned at a bottom of said secondary combustion chamber for collecting liquid silica.**

In addition, Rackley does not teach or suggest the “feeding a volume of biomass” or the “collecting a volume of silica” as claimed in independent Claim 25:

25. (Previously Added) A method of operating a biomass gasification system, said method comprising the steps of:  
**feeding a volume of biomass** into a primary combustion chamber;  
**combusting said biomass** within said primary combustion chamber resulting in producer gas;  
**combusting said producer gas** within a secondary combustion chamber fluidly connected to said primary combustion chamber; and  
**collecting a volume of silica at a bottom of said secondary combustion chamber.**

These are significant features of the present invention that are not taught, suggested or made obvious in view of Rackley or any of the other references.

The Applicant also respectfully submits that Rackley is non-analogous to the present invention. “The determination that a reference is from a non-analogous art is . . . twofold. First, we decide if the reference is **within the field of the inventor’s endeavor**. If it is not, we proceed to determine whether the reference is **reasonably pertinent to the particular problem with which the inventor was involved.**” *In re Wood*, 202 USPQ 171, 174 (C.C.P.A. 1979). “A reference is **reasonably pertinent** if . . . it is one which, because of the matter with which it deals, logically would have commended itself to the inventor’s attention in considering his

problem. . . . If a reference disclosure has the same purpose as the claimed invention, the reference relates to the same problem, . . . [i]f it is directed to a different purpose, the inventor would accordingly have had less motivation or occasion to consider it.” *In re Clay*, 23 USPQ 2d 1058, 1060–61 (Fed. Cir. 1992).

First, Rackley (incinerator for hazardous waste containing heavy metals) is not within the field of the inventor’s endeavor (efficiently removing silica produced from biomass combustion). Second, Rackley is not reasonably pertinent to the particular problem with which the Applicant was involved (i.e. removing silica from biomass combustion – Rackley teaches actually adding silica).

The Applicant also respectfully submits the following case law in support that the prior art stated in the Official Action is non-analogous:

- “In resolving the question of obviousness under 35 USC 103, we presume full knowledge by the inventor of all the prior art in the field of his endeavor. However, with regard to prior art outside the field of his endeavor, we only presume knowledge from those arts reasonably pertinent to the particular problem with which the inventor was involved. . . . The rationale behind this rule precluding rejections based on combination of teachings of references from nonanalogous arts is the realization that an inventor could not possibly be aware of every teaching in every art.” *In re Wood*, 202 USPQ 171, 174 (C.C.P.A. 1979).
- “In the instant application, the examiner has done little more than cite references to show that one or more elements or subcombinations thereof, when each is viewed in a vacuum, is known. The claimed invention, however, is clearly directed to a combination of elements. That is to say, appellant does not claim that he has invented one or more new elements but has presented claims to a new combination of elements. To support the conclusion that the claimed combination is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed combination or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references. . . . Based upon the record before us, we are convinced that the artisan would not have found it obvious to selectively pick and choose elements or concepts from the various references so as to arrive at the claimed invention without using the claims as a guide. It is to be noted that simplicity and hindsight are not proper criteria for resolving the issue of obviousness.” *Ex parte Clapp*, 227 USPQ 972, 973 (B.P.A.I. 1985).
- “We have reminded ourselves and the PTO that it is necessary to consider “the reality of the circumstances” . . . — in other words, common sense—in deciding in which fields a

person of ordinary skill would reasonably be expected to look for a solution to the problem facing the inventor.” *In re Oetiker*, 24 USPQ 2d 1443, 1446 (Fed. Cir. 1992).

- “The Allen-Bradley art is not in the same field of endeavor as the claimed subject matter merely because it relates to memories. It involves memory circuits in which modules of varying sizes may be added or replaced; in contrast, the subject patents teach compact modular memories. . . . Wang’s SIMMs were designed to provide compact computer memory with minimum size, low cost, easy repairability, and easy expandability. . . . In contrast, the Allen-Bradley patent relates to a memory circuit for a larger, more costly industrial controller. . . . Thus, there is substantial evidence in the record to support a finding that the Allen-Bradley prior art is not reasonably pertinent and is not analogous.” *Wang Labs., Inc. v. Toshiba Corp.*, 26 USPQ 2d 1767, 1773 (Fed. Cir. 1993).

**D. CONCLUSION**

In light of the foregoing amendments and remarks, early reconsideration and allowance of this application are most courteously solicited. Should the Examiner consider necessary or desirable any formal changes anywhere in the specification, claims and/or drawing, then it is respectfully asked that such changes be made by Examiner’s Amendment, if the Examiner feels this would facilitate passage of the case to issuance. Alternatively should the Examiner feel that a personal discussion might be helpful in advancing this case to allowance, they are invited to telephone the undersigned.

Respectfully submitted,



Michael S. Neustel (Reg. No. 41,221)  
NEUSTEL LAW OFFICES, Ltd.  
2534 South University Drive, Suite No. 4  
Fargo, North Dakota 58103

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Date

Telephone: (701) 281-8822  
Facsimile: (701) 237-0544  
e-mail: [Michael@neustel.com](mailto:Michael@neustel.com)



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On February 27, 2006.

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Michael S. Neustel

NEUSTEL LAW OFFICES, Ltd.  
2534 South University Drive, Suite No. 4  
Fargo, North Dakota 58103

Telephone: (701) 281-8822  
Facsimile: (701) 237-0544  
e-mail: michael@neustel.com